

Gender Diversity in Radiology: It Is Not Just Black and White; It Is Multiple Shades of Gray

Vaz Zavaletta, MD, PhD, Jessica B. Robbins, MD

A diverse and inclusive environment enhances creativity in problem solving, offers enriched collaborations, and allows innovation. In concert with increasing diversity, we must also strive to create an inclusive environment that both welcomes and fosters diversity.

Increasing gender diversity in the workforce has been at the forefront of the radiology community's efforts. Several recent studies using gender demographic data from the ACR Human Resources Workforce Survey [1], Physician Compare National Downloadable File from CMS [2], and Doximity [3] have quantified the lack of gender diversity in radiology. These studies demonstrate that there are more male radiologists than female radiologists in the workforce, and the authors challenge the radiology community to narrow this gender gap. However, to increase the spectrum of gender diversity in radiology, it is incumbent upon us to understand our own biases and identify institutional-level obstacles.

First, we must be familiar with the terminology regarding sex and gender. "Sex" is an individual's biologic sex chromosomes and internal reproductive structures, which are used to assign male, female, or intersex at birth. Most people understand gender as a binary construct: male and female. In reality, gender should be thought of

more broadly. The Human Rights Campaign has developed a glossary of terms to give us the vocabulary to describe the gender spectrum. This vocabulary adopts a gender-expansive perspective, allowing for an encompassing understanding of gender diversity beyond the traditional binary system [4]. "Gender identity" is one's inner perception of self as male, female, a combination of both, or neither. Gender identity may or may not be concordant with the sex assigned at birth. "Gender expression" is how one externally expresses his or her gender identity, usually through behaviors and phenotypic features. Gender expression may or may not be harmonious with societal expectations of typically masculine or feminine expressions. "Gender nonconforming" describes people who do not align with societal expectations of their gender, or those whose gender expression does not conform with traditional categories. Similarly, "transgender" describes people whose gender identity or expression does not match the expectations based upon the sex assigned to them at birth. Recognition of the differences in sex, gender identity, and expression promotes inclusivity; we must foster a gender-expansive rather than gender-binary diversity among ourselves as physicians.

Second, gender identity and sexual orientation are associated with a higher prevalence of certain types of diseases and cancer. For example, a recent review discussed several cancers that affect people of expansive gender identities and sexual orientations disproportionately, including anal, colorectal, prostate, endometrial, cervical, and lung cancers [5]. In response to these disparities, the National Institutes of Health (NIH) created the Sexual and Gender Minority Research Office in 2015. "Sexual and gender minority" (SGM) was created as an inclusive term "to encompass lesbian, gay, bisexual, and transgender populations as well as those whose sexual orientation, gender identity and expression, or reproductive development varies from traditional, societal, cultural, or physiologic norms" [6]. Although the causes and effects of these health disparities are not fully understood, the lack of robust sexual orientation and gender identity data currently limits the extent to which the impact of these factors can be measured. In 2011, the NIH and the Institute of Medicine made several key assessments and recommendations. In particular, they recommended that the NIH should support the rigorous development of valid and reliable gender identity data. After

these recommendations, the Fenway Institute developed and tested a two-step gender identity question to collect gender and sex data in electronic medical records [7]. This work has been expanded upon by various national organizations, like the Association of American Medical Colleges (AAMC), to enable gender-expansive data collection in the workplace and educational environments. Improved gender data acquisition will pave the way for scientific exploration in the future.

Third, lack of culturally competent providers represents a significant barrier to seeking and accessing health care for many SGM individuals. We can reduce this barrier by recruiting and training a more diverse group of physicians, including SGM physicians. Among medical students, contact with SGM individuals allows for more understanding and willingness to serve SGM patients and work with SGM colleagues [8]. The AAMC recognizes that SGM medical students reported increased levels of stress, social isolation, less social support, and the perception of a less positive emotional climate [9]. Furthermore, they recognized that there was a paucity of gender-expansive data on matriculating medical students. Thus, in 2016 the AAMC included an optional two-step gender identity question in the Matriculating Student Questionnaire as follows: “(1) What is your current gender identity? Male, Female, Trans male/Trans man, Trans female/Trans woman, Genderqueer / Gender nonconforming, Different Identity [please state]; (2) What sex were you assigned on your original birth certificate? Male, Female” [9]. Most recently, the AAMC implemented

groundbreaking advances to cultivate inclusivity by welcoming gender diversity in medical school admissions. For the first time, the AAMC 2018 medical school application includes questions on gender identity and preferred pronoun.

Addressing diversity and inclusivity in radiology is multifaceted and necessarily will involve the entire pipeline of trainees from medical students, residents, and fellows. The need for inclusivity will extend to include the workforce of practicing radiologists and the leadership of regional and national radiology organizations. A review of several studies highlights that SGM medical students tend to choose specialties in which they perceive the specialty to be more inclusive to SGM individuals [8]. SGM medical residents are advocating for change; an essay written by ACGME-accredited trainees eloquently requests that the ACGME adopt gender-expansive data collection similar to the two-step process initially proposed by the Fenway Institute and now used by the AAMC [10]. We as a radiology workforce must also advocate for diversity and inclusivity.

As with any change, we must first continue to evaluate where we are and envision where we want to be. We must ask ourselves how we can become more culturally competent so that we can best serve our SGM patients and how can we recruit more SGM radiologists. In a report on applying organizational change to promote LGBT inclusion, Eckstrand states that “although broad organizational change is the ultimate goal, initiating and building change may initially require a narrow scope

with a measurable outcome” [11]. As such, we can start with evaluating the required binary gender demographic by several national radiology organizations and conferences. Perhaps it is time for the radiology community to embrace the two-step gender identity questions pioneered in medicine by the AAMC. We must advocate for our SGM colleagues and patients as well as for ourselves. In this way, we can positively grow our field, promote health care equity, and provide the best possible patient care.

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Vaz Zavaletta, MD, PhD, and Jessica B. Robbins are from the Department of Radiology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

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Vaz Zavaletta, MD, PhD: University of Wisconsin School of Medicine and Public Health, Department of Radiology, 600 Highland Avenue, Madison, WI 53792; e-mail: vzavaletta@uwhealth.org.